Amendments to the Claims

Please amend Claims 11 and 25. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Previously presented) A modified form of a regulator of complement activation protein (RCA protein) wherein the RCA protein is selected from the group consisting of complement receptor 1, decay accelerating factor, membrane cofactor protein, C4 binding protein, factor H, and these RCA proteins wherein the carboxy terminus of the RCA protein is removed to allow the protein to be secreted, wherein the modified form is selected from the group consisting of:
    a) a hybrid RCA protein comprising short consensus repeats (SCRs) derived from two, different of the RCA proteins,
    b) a recombined RCA protein wherein the SCRs of the RCA protein are rearranged, and
    c) a truncated RCA protein consisting of three SCRs,

    wherein the modified form of the RCA protein binds C3b, C4b or C3b and C4b.

2. (Canceled)

3. (Previously presented) The modified form of the RCA protein of claim 1 wherein the RCA protein is complement receptor 1.

4. (Previously presented) The modified form of an RCA protein of claim 1 wherein the RCA protein is decay accelerating factor.

5. (Previously presented) The modified form of the RCA protein of claim 1 wherein the RCA protein is factor H.

6-7. (Canceled)

8. (Previously presented) A modified form of an RCA protein wherein the RCA protein is selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, factor H, and these RCA proteins wherein the carboxy terminus of the RCA protein is removed to allow the protein to be secreted, wherein the modified form contains amino acid substitutions in the SCRs which correspond to amino acid substitutions in the SCRs of complement receptor 1 (SEQ ID No: 13) selected from the group consisting of:

CR1-4 with its first 122 amino acids (SCR1-2) (Sequence ID Nos 1 and 3) replaced with CR1 amino acids 497-618 (SCR 8-9) (Sequence ID Nos. 2 and 4) and CR1-4(8,9) with deletion of 194-253; and substitution of amino acids 271-543 with: T-R-T-T-F-H-L-G-R-K-C-S-T-A-V-S-P-A-T-T-S-E-G-L-R-L-C-A-A-H-P-R-E-T-G-A-L-Q-P-P-H-V-K (Sequence ID No. 11), or these amino acid sequences where any I is replaced with either L or V, any L is replaced with either I or V, any V is replaced with I, L, or F, any F is replaced with V, any K is replaced with R, any R is replaced with K, any Q is replaced with N, any N is replaced with Q, any D is replaced with E, any E is replaced with D, any G is replaced with A, or any A is replaced with G.

9. (Canceled)

10. (Previously presented) A modified form of decay accelerating factor wherein one or more substitutions are introduced into the region of the protein corresponding to decay accelerating factor SCRs 2-3 as shown in Sequence ID No. 17 selected from the group consisting of 180-187: S-T-K-P-P-I-C-Q (amino acids 54-61 of Sequence ID No. 4); 175-178: N-A-A-H (amino acids 49-52 of Sequence ID No. 4); 175-187: S-T-K-P-P-I-C-Q-N-A-A-H (Sequence ID No. 9); 130: R (amino acid 4 of Sequence ID No. 3); 145:D (amino acid 19 of Sequence ID No. 4); 77-84: K-L-K-T-Q-T-N-A-S-D (amino acids 12-21 of Sequence ID No. 2); 90-92: S-L-K (amino acids 27-29 of Sequence ID No. 2), and these amino acid sequences where I is replaced with either L or V, L is replaced with either I or

V, V is replaced with I, L, or F, F is replaced with V, K is replaced with R, R is replaced with K, Q is replaced with N, N is replaced with Q, D is replaced with E, E is replaced with D, G is replaced with A, or A is replaced with G.

11. (Currently amended) The modified form of the RCA protein of claim 1 wherein the modified form of the RCA protein is factor H comprising sequences conferring on the modified form of the RCA protein an activity selected from the group consisting of [[Cab]] C3b binding activity, C3b cofactor activity, C4b binding activity, and C4b cofactor activity, wherein the sequences are derived from a protein selected from the group consisting of complement receptor 1, membrane cofactor protein, C4 binding protein, and factor H.

12. (Previously presented) The modified form of the RCA protein of claim 1 wherein the hybrid RCA protein comprises SCRs derived from an RCA protein selected from the group consisting of complement receptor 1, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H.

13. (Previously presented) The modified form of the RCA protein of claim 1 wherein the modified form of the RCA protein includes SCRs 2, 3 and 4 of DAF and has C3b cofactor activity, C4b cofactor activity and decay accelerating activity.

14. (Previously presented) A modified form of the RCA protein of claim 1 wherein the truncated RCA protein consists of three SCRs and has two complement regulatory activities.

15. (Previously presented) The modified form of the RCA protein of claim 1, 4 or 12, further comprising a pharmaceutically acceptable carrier.

16. (Previously presented) A method for making a modified form of an RCA protein wherein the RCA protein is selected from the group consisting of complement receptor 1, decay

accelerating factor, membrane cofactor protein, C4 binding protein, factor H, and these RCA proteins wherein the carboxy terminus of the RCA protein is removed to allow the protein to be secreted, wherein the modified form is selected from the group consisting of:

a) a hybrid RCA protein comprising SCRs derived from two, different of the RCA proteins,

b) a recombined RCA protein wherein the SCRs of the RCA protein are rearranged, and

c) a truncated RCA protein consisting of three SCRs,

wherein the modified form of the RCA protein binds C3b, C4b, or C3b and C4b, the method comprising expressing a DNA sequence encoding the modified form of the RCA protein in a host cell.

17. (Canceled)

18. (Previously presented) The method of claim 16 wherein the RCA protein is complement receptor 1.

19. (Previously presented) The method of claim 16 wherein the RCA protein is decay accelerating factor.

20. (Previously presented) The method of claim 16 wherein the RCA protein is factor H.

21-22. (Canceled)

23. (Previously presented) A method for making a modified form of an RCA protein wherein the RCA protein is selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, factor H, and these proteins wherein the carboxy terminus of the RCA protein is removed to allow the protein to be secreted, wherein the modified form of an RCA

protein contains amino acid substitutions in the SCRs which correspond to amino acid substitutions in the SCRs of complement receptor 1 (SEQ ID No: 13) selected from the group consisting of:

CR1-4 with its first 122 amino acids (SCR1-2) (Sequence ID Nos. 1 and 3) replaced with CR1 amino acids 497-618 (SCR 8-9) (Sequence ID Nos. 2 and 4) and CR1-4(8,9) with deletion of 194-253; substitution of amino acids 271-543 with: T-R-T-T-F-H-L-G-R-K-C-S-T-A-V-S-P-A-T-T-S-E-G-L-R-L-C-A-A-H-P-R-E-T-G-A-L-Q-P-P-H-V-K (Sequence ID No. 11), and these amino acid sequences where any I is replaced with either L or V, any L is replaced with either I or V, any V is replaced with I, L, or F, any F is replaced with V, any K is replaced with R, any R is replaced with K, any Q is replaced with N, any N is replaced with Q, any D is replaced with E, any E is replaced with D, any G is replaced with A, or any A is replaced with G, the method comprising expressing a DNA encoding the modified form of the RCA protein in a host cell.

24. (Previously presented) A method for making a modified form of an RCA protein wherein the RCA protein is selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, factor H, and these proteins wherein the carboxy terminus of the RCA protein is removed to allow the protein to be secreted, where the modified form of an RCA protein contains amino acid substitutions in the SCRs which coresond to amino acid substitutions in the SCRs of complement receptor 1 (SEQ ID NO: 13) selected from the group consisting of:

79: D (amino acid 19 of Sequence ID No. 4); 37, 79: Y, D (amino acid 37 of Sequence ID No. 2 and amino acid 19 of Sequence ID No. 4); 92: T (amino acid 32 of Sequence ID No. 4); 92-94: K...Y (amino acids 32-34 of Sequence ID No. 3); 99, 103, 106: S...T...I (amino acids 39, 43 and 46 of Sequence ID No.3); 109-112: D-T-V-I (amino acids 49-52 of Sequence ID No. 3); 110: T (amino acid 50 of Sequence ID No. 3); 111: V (amino acid 51 of Sequence ID No. 3); 112: I (amino acid 52 of Sequence ID No. 3); 1, 3: Q...N (amino acids 1, 3 of Sequence ID No. 1); 6-9: E-W-L-P (amino acids 6-9 of Sequence ID No. 1); 12-16, 18-21: K-L-K-T-Q...N-A-S-D (amino acids 12-21 of

Sequence ID No. 2); 27, 29: S...K (amino acids 27, 29 of Sequence ID No. 2); 37: S (amino acid 37 of Sequence ID No. 1); 44, 47, 49: I...K...S (amino acids 44, 47, 49 of Sequence ID No. 1); 52-54, 57, 59: TG-A...R...R (amino acids 52-54, 57, 59 of Sequence ID No. 1); 78-79, 82: K-G...F (amino acids 18-19, 22 of Sequence ID No. 3); 85, 87: Q...K (amino acids 25, 27 of Sequence ID No. 3); 12-16, 18-21: R-P-T-N-L...D-E-F-E (amino acids 12-21 of Sequence ID No. 1); 27, 29: Y...N (amino acids 27, 29 of Sequence ID No. 1); 35, 64-65, 94: G...R-N...Y (amino acid 35 of Sequence ID No. 1, amino acids 4-5, 34 of Sequence ID No. 3), and these amino acid sequences where any I is replaced with either L or V, any L is replaced with either I or V, any V is replaced with I, L or F, any F is replaced with V, any K is replaced with R, any R is replaced with K, any Q is replaced with N, any N is replaced with Q, any D is replaced with E, any E is replaced with D, any G is replaced with A, or any A is replaced with G, the method comprising expressing a DNA encoding the modified form of the RCA protein in a host cell.

25. (Currently amended) A method for making a modified form of decay accelerating factor wherein one or more substitutions are introduced into the region of the protein corresponding to decay accelerating factor SCRs 2-3 as shown in Sequence ID No. 17 selected from the group consisting of

180-187: S-T-K-P-P-I-C-Q (amino acids 54-61 of Sequence ID No. 4); 175-178: N-A-A-H (amino acids 49-52 of Sequence ID No. 4); 175-187: S-T-K-P-P-I-C-Q-N-A-A-H (Sequence ID No. 9); 130: R (amino acid 4 of Sequence ID No. 3); 145: D (amino acid 19 of Sequence ID No. 4); 77-84: K-L-K-T-Q-T-N-A-S-D (amino acids 12-21 of Sequence ID No. 2); 90-92: S-L-K (amino acids 27-29 of Sequence ID No. 2), and these amino acid sequences where any I is replaced with either L or V, any L is replaced with either I or V, any V is replaced with I, L, or F, any F is replaced with V, any K is replaced with R, any R is replaced with K, any Q is replaced with N, any N is replaced with Q, any D is replaced with E, any E is replaced with D, any G is replaced with A, or any A is replaced with G, the method comprising expressing a DNA encoding the modified form of decay accelerating factor in a host cell.

26. (Previously presented) The method of claim 16 wherein the RCA protein is factor H comprising sequences conferring on the protein an activity selected from the group consisting of C3b binding activity, C3b cofactor activity, C4b binding activity, and C4b cofactor activity, wherein the sequences are derived from an RCA protein selected from the group consisting of complement receptor 1, membrane cofactor protein, C4 binding protein, and factor H.

27. (Previously presented) The method of claim 16 wherein the DNA sequence encodes a hybrid RCA protein comprising SCRs derived from an RCA protein selected from the group consisting of complement receptor 1, decay accelerating factor, membrane cofactor protein, C4 binding protein and factor H, including in reading frame a DNA encoding at least one SCR derived from a different RCA protein selected from the group consisting of complement receptor 1, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H.

28. (Previously presented) The method of claim 16 wherein the modified form of the RCA protein includes SCRs 2, 3 and 4 of DAF and has C3b cofactor activity, C4b cofactor activity and decay accelerating activity.

29. (Previously presented) The method of claim 16 wherein the modified form of the RCA protein is a truncated RCA protein consisting of three SCRs and having two complement regulatory activities.

30. (Previously presented) The method of claim 16 further comprising isolating the modified form of the RCA protein and mixing with the isolated modified form of an RCA protein a pharmaceutically acceptable carrier.

31. (Previously presented) A DNA sequence which encodes a modified form of the RCA protein of claim 1, 4, or 12.

32. (Previously presented) The DNA sequence of claim 31 inserted into an expression vector operably linked to control sequences compatible with a host cell, which expression vector is capable, when transformed into the host cell, of expressing a DNA encoding the modified form of the RCA protein.

33. (Canceled)

34. (Previously presented) A method for enhancing the C4b or C3b cofactor activity of an RCA protein, wherein the protein has either C3b or C4b cofactor activity, comprising adding sequences to the protein conferring binding of the other ligand, either C4b or C3b, wherein the sequences are present in a protein selected from the group of naturally occurring complement receptor 1, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H.